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CONTENTS

VAN DYKE, FRANK ELLSWORTH BLAISDELL, SR. 49
BARR, PARASITES OF COLEOPTERA 58
BLAISDELL, A NEW GENUS AND SPECIES OF THE FAMILY TENEBRIONIDAE 59
PATE, PHILANTHINE WASPS 63
PERSONAL NOTE—H. B. LEECH 63
BOOKS AND WORLD RECOVERY 67
COCKERELL, A NEW BEE FROM THE MARSHALL ISLANDS 68
PERSONAL NOTE—E. G. LINSLEY 70
LANHAM, DESCRIPTIVE NOTES ON ANDRENA 71
NYE, A SIMPLE METHOD OF MOUNTING APHIDS 73
SABROSKY, A NEW PTERODONTIA FROM NEW GUINEA 74
DeLONG AND HERSHBERGER, NEW NORTH AMERICAN LEAFHOPPERS 76
SUGDEN, WOODBURY AND GILLETTE, MIGRATIONS OF THE PAINTED LADY BUTTERFLY 79
FRAZIER, BOOK REVIEW—CHECK LIST OF CICADELLIDAE 83
BARR AND HURD, NOTES AND DESCRIPTIONS OF DASYMUTILLA 85
JOHANNSEN, INTERNATIONAL CONGRESS OF ENTOMOLOGY 90
ALEXANDER, UNDESRIBED TIPULIDAE FROM THE WESTERN UNITED STATES, III 91
VAN DYKE, A WEEVIL NEWLY INTRODUCED INTO CALIFORNIA 96

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1947

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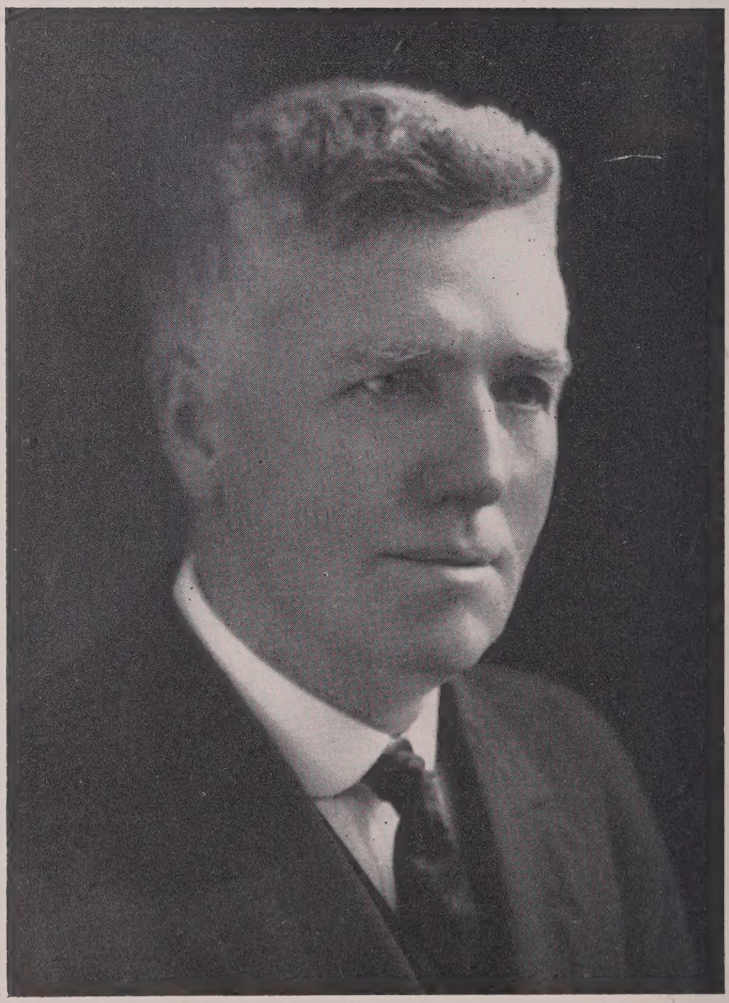

Frank Ellsworth Blaisdell, Sr.

The Pan-Pacific Entomologist

Vol. XXIII, No. 2 April, 1947

THE BIOGRAPHY OF FRANK ELLSWORTH BLAISDELL, SR[1]

BY EDWIN C. VAN DYKE
California Academy of Sciences, San Francisco

Dr. Blaisdell was born March 13, 1862, in Pittsfield, New Hampshire, the son of Solon Greenleaf Blaisdell and Anna Greely (Clark) Blaisdell. Both parents were of old New England ancestry. The father was a saddler and harness maker and during the Civil War he served as a sergeant in the Twelfth New Hampshire Volunteers. In 1870, the family, including three children, moved to San Francisco where the father entered the real estate business and later became an agent of the A. L. Bancroft Company, the well-known book dealers. In 1871, the three children were attacked with scarlet fever. The two younger, John and Elmer, died, but Frank survived though he was left in a weakened condition which prompted his parents to move to San Diego where the father opened a harness and saddlery store. Frank attended the B and D Public Schools. In 1875, the elder Blaisdell took up a ranch in Poway Valley, about 26 miles northeast of San Diego, where he started an apiary and orchard and planted a considerable acreage to grain. Here Frank grew up into a strong and healthy young man. He attended the country school and later took over most of the work of the ranch.

In 1886, he decided to study medicine, so the ranch was disposed of, the father starting a nursery at Coronado and selling the plants in San Diego. Frank secured a position in a store in San Diego and began reading medicine under the instruction of Dr. P. C. Remondino and Dr. C. C. Valle. He also prepared himself for the medical school examinations. To a considerable extent, Dr. Blaisdell was a self-taught man. He never had a modern high school or college education, but through diligent study, whenever he could get the time, he made up for the deficiency. In 1887, he entered Cooper Medical College, San Fran-

[1] From a short autobiographical sketch of Frank Ellsworth Blaisdell, Sr.

cisco, and graduated November 12, 1889, with the degree of Doctor of Medicine. He immediately returned to San Diego and started to practice but with very poor success. Consequently, in 1892, he returned to San Francisco where he learned that there was an opening in the mining town of Mokelumne Hill, Calaveras County. He left for the mountains and before long was well established there. On February 18, 1894, he married Miss Ella Katherine Peek and on March 31, 1896, his son and only child, Frank Ellsworth Blaisdell, Jr., was born.

In 1900, he accepted an offer to become an instructor in Cooper Medical College, from an old classmate, Professor Albert H. Taylor, who was head of the Department of Anatomy. Before entering upon his duties at the College, however, because he felt the need of a vacation, he accompanied his brothers-in-law to Nome, Alaska, where they worked a claim on Dexter Creek during the summer. Here the Doctor took advantage of the opportunity to collect and as a result made an extensive collection of the plants, birds, and insects of the region. The bird skins and plants were given to the California Academy of Sciences but, unfortunately, all except a few plant types were destroyed at the time of the San Francisco fire, in 1906. In September, he returned to San Francisco from Alaska and started his work at the medical school. He was first a demonstrator, later was made Professor and head of the Department of Anatomy. During this period, he made a trip to Johns Hopkins Medical School at Baltimore, for some post graduate work, and while there utilized his spare time for field work in entomology and visits to Washington to consult with Dr. E. A. Schwarz. In 1910, Cooper Medical College affiliated with Stanford University, becoming the Stanford Medical School. Dr. Blaisdell was then appointed Assistant Professor of Applied Anatomy, later transferring to the Division of Surgery as Professor of Surgery in charge of Surgical Pathology. This post he held until 1927 when he was retired at the age of 65 years, as Professor Emeritus of Surgery.

The next year, Doctor and Mrs. Blaisdell visited the town of his birth, Pittsfield, New Hampshire, and also New York, Washington, Philadelphia, Boston and Chicago in order to visit the various museums centered there and the entomologists connected with them. After returning home, the Doctor spent much of his time at the rooms of the Department of Entomology of the Cali-

fornia Academy of Sciences. His collection of Coleoptera, close to two hundred thousand specimens, had been deeded to the Academy in 1924, but he continued his entomological work at the Academy until failing health in 1945, compelled him to give up and move to Watsonville, California, in order to be near his son. There he died on July 6, 1946. His wife, son, Dr. Frank Ellsworth Blaisdell, Jr., and three grandchildren survive him.

Dr. Blaisdell was a first-class collector. Whenever he had the opportunity, he made it a point to collect and in this way he built up his large collection. He collected in many places but the areas where he did his best work and which will always be associated with his name are as follows: San Diego and the ranch at Poway where his earliest field work was done; Mokelumne Hill in Calaveras County where he practiced medicine many years; the San Francisco Peninsula and the Bay Area generally which was his home in later years; Nome, Alaska; Baltimore, Maryland; and Pittsfield and Barnstead, New Hampshire. His summer vacations were generally spent in regions which were supposed to be good collecting places. As a result he visited a great many different areas up and down the Pacific Coast.

In his early years, he was greatly aided and encouraged by such good naturalist friends as O. N. Sanford, Frank Stephens and G. H. Field, residents of San Diego or neighboring communities. With Henry Ulke of Washington, he corresponded for many years and he also received much aid from him. Later, he corresponded extensively with Colonel T. L. Casey. In fact, he was a correspondent for most of his life with leading Coleopterists of the country such as Dr. E. A. Schwarz, Charles Liebeck, Henry C. Fall, Frederick Blanchard, Charles Dury, H. F. Wickham, W. S. Blatchley, Dr. A. Fenyes, H. C. Loding, Ralph Hopping and others. In later life, when he became an authority in his own right, he aided many a beginner by naming up his specimens for him. This work was mutual, too, for in this way and through extensive exchanging, he acquired many desirable additions to his collection.

In evaluating Dr. Blaisdell and his work, we must recognize first that he was an able naturalist. He was a good botanist, a good ornithologist and in general, a keen observer. He early acquired a working knowledge of San Diego plants and while at Nome, Alaska, assembled a good collection of the plants of that

region which was presented to the California Academy of Sciences. In ornithology, his first work was done with the birds of San Diego County. He not only knew the birds of the region but through close observation, proved to his satisfaction that his Poway ranch was in the direct line of migration of the great majority of the migration birds of that part of the state. He also made dissections of many birds and detailed anatomical drawings. Some of these are preserved and show that he had first-class artistic abilities. In Alaska, he collected a series of bird skins which, like the botanical specimens, were lost in the San Francisco fire of 1906. It was in Entomology, however, that his best work was done. At first, he collected specimens of all orders of insects. His collection of miscellaneous insects was given to the California Academy of Sciences before 1906 and in consequence lost by fire. His main collection, that of the Coleoptera, was not given until 1924. Upon this, his major entomological work was based which continued from the time of his early manhood until shortly before his death. Dr. Blaisdell was primarily a morphologist and this influenced his systematic work which was likely to accentuate such features as form and ornamentation. In his papers he was able to present his views in the most convincing way because of his expert drawings, especially those pertaining to structural details. In his best work, his study and interpretation of details was excellent. His work on the male genitalia of the Eleodini which he demonstrated was of an entirely different type from that of the Old World Blapstini with which it had been formerly associated, was a major contribution. He was not much interested in theories nor did he care to study exotic material to any great extent. A glance at his bibliography will show that he studied in all families but later in life he gave most of his attention to the Tenebrionidae and Melyridae and in consequence became the outstanding authority on these groups.

Dr. Blaisdell was a man of fine character and he had an attractive personality. As a result, he had a host of friends and was much respected. He was generous and loyal. He was particularly generous in the manner of giving both time and attention to beginners. To those of us who knew him best, he will be greatly missed but we will also have the satisfaction of remembering that he lived a long life and a very productive one.

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PARASITES OF TWO SPECIES OF COLEOPTERA ASSOCIATED WITH MONTEREY CYPRESS

In December of 1945 a large diseased Monterey Cypress (*Cupressus macrocarpa*) on the campus of the University of California at Berkeley was cut down. Upon examination of the trunk and limbs of this tree, rather large populations of adults and larvae of the scolytid, *Phloesinus cupressi* Hopkins, and larvae of the cerambycid, *Atimia maritima* Linsley, were found under the bark. Adults and pupae of the cerambycid were in pupal cells in the wood.

Several of the limbs were taken into the laboratory and in a few days, specimens of a braconid wasp, *Dendrosoter integer* Muesebeck, (det. C. F. W. Muesebeck) and an ichneumonid wasp, *Xorides insularis* (Cresson) (det. H. K. Townes) had emerged through the bark. Upon closer examination, it was discovered that *D. integer* had parasitized larvae of *P. cupressi* and *X. insularis* had parasitized larvae of *A. maritima*.—W. F. Barr, *University of California, Berkeley.*

A NEW GENUS AND SPECIES OF THE COLEOPTEROUS FAMILY TENEBRIONIDAE

BY FRANK E. BLAISDELL, SR.
California Academy of Sciences, San Francisco, California

Lariversius Blaisdell, new genus[1]

Labrum transverse, apex slightly sinuate at middle, deflexed in apical third and densely, strongly punctate; each puncture with a moderately long fulvous seta; angle of deflection slightly raised, behind which the surface is narrowly impunctate and smooth, thence to base densely punctate, punctures small.

Epistoma quite deeply and arcuately emarginate between the rounded lateral lobes, margin of lobes slightly reflexed and rather prominent, surface rather densely punctate, the latter slightly coarse, central part of surface slightly convex.

Mentum rather short, transverse and somewhat oblong, ligula and labial palpi exposed, capable of entire retraction; apex moderately arcuate. Last segment of maxillary palpi somewhat triangular, sensitive surface slightly oblique and oval. Last segment of labial palpi smaller and subtriangulo-oval.

Sides of head somewhat explanate over the antennal insertions and apical margin.

Eyes short and transverse, scarcely convex and somewhat sunken, not in the least prominent, except when viewed from above, partly emarginated by sides of the front; superior lobe of each slightly larger and rounded, thence to a point behind the antennal insertion narrower; temporal margin moderately prominent, the surface of the eyes directed forward and outward at narrowest part opposite side of front, about 3 facets wide, the latter slightly convex.

Antennae short, basal segment rather stout and only slightly visible from above; segments 2 to 8 inclusive cylindrical, short, third slightly the longest; 9, 10 and 11, dilated and transverse, forming a moderately wide club; eleventh segment more rounded at apex.

Pronotum not margined at apex, except just within the apical angles; lateral margins very finely and irregularly margined. Sides of prothorax densely punctate and ciliate. Intercoxal process

[1] Named after Mr. Ira LaRivers of Reno, Nevada, who furnished the material upon which this paper is based.

Figure 1. *Lariversius tibialis* Blaisdell, new genus and species.

arcuate and not in the least prominent posteriorly. Procoxae without trochantine. Metasternum and mesosternum broad between the coxae; mesocoxae with a small trochantine, metacoxae ovate. Side pieces small and poorly defined.

Protibiae ciliate with long yellowish cilia beneath, also along posterior and inferior margins, also for the mesotibiae.

Genotype: *Lariversius tibialis* Blaisdell, new species.

Lariversius tibialis Blaisdell, new species

Form oblong-oval, a little more than twice as long as wide, moderately convex; color piceous to moderately rufous. Luster shining to somewhat alutaceous. Sides of prothorax rather densely invested with rather long yellow pubescence, also sides of elytra; surface of sterna with scattered, short setiform hairs.

Head moderate in size, about twice as wide as long before the post-ocular line, and about equally wide across the eyes and sides over the antennal insertions. Sides of head somewhat explanate over the antennal insertions and apical margin; sides feebly arcuate and slightly convergent anteriorly, feebly emarginate at the feebly oblique epistomal sutures, thence arcuate to the lateral epistomal lobes. Submentum transverse with sides rounded, feebly bilobed in front and with a median longitudinal impression beneath. Epistoma transverse, quite deeply and somewhat emarginate apically between the arcuately prominent lateral lobes; margins of the latter slightly reflexed, the surface slightly concave and rather densely and finely punctulate. Epistomal sutures rather feeble, more or less to obsolete centrally and feebly oblique to the small lateral emargination. Frons feebly convex centrally and laterally before the eyes, rather sparsely punctate, the punctures moderately small, vertex more or less impunctate and smooth. Antennae relatively short, moderate in stoutness, six-sevenths as long as width of pronotal apex, segments closely articulated; first segment invisible beneath the explanate side of the frons, segments two to the eighth short and annular, segments nine and ten slightly wider and transverse, the eleventh oval, the three forming a club.

Eyes short, transverse, scarcely convex, not in the least prominent, except when viewed from above, partly emarginated by the frontal process; superior lobe of each slightly larger and rounded thence narrower to a point behind the antennal insertion, temporal angle moderately prominent. Surface of the eyes directed forward and outward at narrowest part in line of the sides of the front and there about three facets in length.

Pronotum slightly oval, about one-third as wide as width at middle or equal to the length, broadly and not deeply emarginate between the rather small, slightly prominent and obtuse apical angles, margin not beaded at apex, except at the angles; side

margin broadly and continuously—including base—arcuate from side to side, very feebly beaded. Disk not prominent laterally, moderately and evenly convex, surface smooth, very sparsely punctulate, punctures a little larger against the margins, especially at the apical angles.

Prothoracic sides convex and flush with the discal margin, rather densely punctate, each puncture finely muricate and with a rather long yellowish hair. Intercoxal process of the prosternum arcuate between the coxae, terminating in a short blunt point. Procoxae without trochanter.

Elytra slightly longer than wide, as viewed from above, viewed more obliquely one-seventh longer than wide, one-sixth wider than pronotum. Base not margined. Widest about one-fourth from base. Form suboval, sides broadly arcuate in basal two-thirds, thence more convergent in apical third, apex obtuse. Disk moderately convex, laterally broadly declivous and inflexed to the epipleurae, apically obliquely declivous to the apex. Surface quite densely muricately punctate viewed from above irregularly punctate, viewed obliquely lengthwise series are somewhat evident; laterally and apically each puncture has a short seta.

First abdominal segment equal in length to the combined length of the second and third segments, the intercoxal part transverse and angulate; combined length of third and fourth segments quite equal to that of the fifth; fourth shortest and two-thirds as long as third. Length (anterior pronotal margin to sutural apex) 9 mm., breadth 5.4 mm.

Holotype: (No. 5213, Mus. Calif. Acad. Sci., Ent.): Collected in sand dunes near Pyramid Lake, Nevada, August 16, 1941, by Ira La Rivers.

Paratypes: Eighty-five specimens from type locality collected on above date as well as on August 24 and September 1, 1941, by Ira La Rivers. These are deposited in the La Rivers Collection, California Academy of Sciences, U. S. National Museum, Academy of Natural Sciences, Philadelphia, American Museum of Natural History, Museum of Comparative Zoology, Harvard University, and the British Museum of Natural History.

Personal Note

Hugh B. Leech of the Forest Insect Laboratory, Vernon, B. C., has accepted a position in the Department of Entomology of the California Academy of Sciences. Mr. Leech will assist with general curatorial work and will carry on his research on aquatic and other Coleoptera.

ON THE GENERA OF PHILANTHINE WASPS, WITH THE DESCRIPTION OF A NEW SPECIES FROM ARIZONA

(Hymenoptera: Sphecidae)

BY V. S. L. PATE
Ithaca, New York

The Philanthine wasps are a small compact group of genera with representatives in all the major zoogeographic regions of the world save the Australian Realm[1]. Four genera occur in the New World: *Philanthus* Fabricius, *Trachypus* Klug, *Aphilanthops* Patton, and the Miocene fossil genus *Prophilanthus* Cockerell. All the extant Old World forms are referable to the nominate genus *Philanthus*[1]. For a fossil species discovered in the Oligocene beds on the Isle of Wight, England, Cockerell erected the genus *Philoponites*. In addition, Giner Marí has recently described *Philoponoïdes*[2] for a new species, *Philoponoïdes tricolor*, which he captured in 1939 in northern Rio de Oro. Giner states this genus is intermediate between *Philanthus* and *Philoponidea*, and since the latter is a Cercerine genus, *Philoponoïdes* may eventually prove to be referable to that tribe.

The following table will serve to differentiate the genera of Philanthine wasps.

Key to the Genera

1. Fossil forms 2
   Extant forms 3
2. Oligocene forms; (Isle of Wight, England) ..... *Philoponites* Ckl.
   Miocene forms; (Florissant, Colorado) ..... *Prophilanthus* Ckl.
3. Abdomen with first segment very slender, elongate and petiolate, two to three times as long as wide at apex and separated there by a distinct constriction from remainder of abdomen. Fore wing with marginal cell not appendiculate at apex. Eyes with inner orbits emarginate or distinctly angulate and more or less convergent toward vertex. (Neotropical, melittotherous forms) ..... *Trachypus* Klug
   Abdomen with first segment broadly sessile with second segment, or if separated from second by a constriction then not appreciably longer than broad at apex. (Holarctic and Oriental forms) 4

[1] Frederick Smith described a *Philanthus* (*Trachypus*) *notaulus* [1861, Journ. Proc. Linn. Soc., Zool., VI, p. 57] from Australia, but I believe this species is either referable to another genus, or perhaps had an incorrect locality label.
[2] Eos, XX, pp. 372-375, (1945).

4. Eyes with inner orbits entire, straight or convex, and parallel, never strongly convergent toward vertex. Fore wing with marginal cell distinctly appendiculate at apex. (Nearctic, myrmecotherous forms) ..... *Aphilanthops* Patton

Subgenera of *Aphilanthops*:

a. Postscutellum with a large, distinct, backward projecting laminate flange which more or less overhangs an excavation in the upper anteriolateral corner of propodeum. Females with both pygidium and hypopygium large, subquadrate, and concave ..... *Clypeadon* Patton

aa. Postscutellum with lateral flange absent or very poorly developed and anteriolateral corner of propodeum without a marked depression. Females with pygidium and hypopygium simple, normal, trigonal, flat, not so modified ..... *Aphilanthops* sensu stricto

Eyes with inner orbits distinctly angulate medially and generally convergent toward vertex. Fore wing with marginal cell not appendiculate at apex. (Holarctic and Oriental, melittotherous forms) ..... *Philanthus* Fabricius

Philoponites Cockerell, 1916, contains only one species: *Philoponites clarus* which Cockerell described from the Oligocene beds at Gurnet Bay, Isle of Wight, England.

Prophilanthus Cockerell, 1906, is likewise a monotypic fossil group. Its sole species, *Prophilanthus destructus* Cockerell, was discovered in the Miocene shales at Florissant, Colorado.

Philanthus Fabricius, 1790 (of which *Simblephilus* Panzer, 1801, *Symblephilus* Panzer, 1806, *Cheilopogonus* Westwood, 1834, *Anthophilus* Dahlbom, 1844, *Chilopogon* Kohl, 1897, *Epiphilanthus* Ashmead, 1899, *Pseudanthophilus* Ashmead, 1899, *Ocloclетes* Banks, 1913, and *Ococlетes* Mickel, 1918, are synonyms) is the largest and most widely distributed genus in the tribe. The genus is best developed in the Holarctic Region, but there are a considerable number of species known from the Ethiopian Region. The Oriental *Philanthus* fauna is apparently an attenuation of that in the Palaearctic Region, for thirteen species have been described from India, one from Assam, and three from Tenasserim. Van der Vecht reports only one species from Java[3], and the genus has probably reached the limits of its distribution here in Sundaland. The genus is apparently wholly absent from the Australian Realm. In North America, *Philanthus* is represented by thirty-one species and subspecies,

[3]Ent. Med. Ned-Indië, V, p. 84, (1939).

according to Strandtmann who has recently presented a review of the genus[4]. The species of *Philanthus* are terricolous fossorial forms which provision their nests with various genera of bees such as *Andrena*, *Halictus*, and *Calliopsis;* some species prey more or less exclusively upon the honey bee, *Apis mellifera.* Hamm and Richards[5], and Berland[6] have given digests of the biology of the European species; and the Peckhams[7], the Raus[8], and Reinhard[9] have presented entertaining accounts of the North American forms.

Trachypus Klug, 1810 (of which *Simblephilus* Dahlbom, 1844 and *Philanthocephalus* Cameron, 1890 are synonyms) is confined to the Neotropical Region and is the only generic representative of the Philanthine wasps in that region. Various Old World species have at one or another time been referred to *Trachypus* but such forms have always eventually proved to be merely species of *Philanthus.* Like *Philanthus*, the species of *Trachypus* nest in the ground and provision their burrows with bees.[10]

Aphilanthops Patton is a small endemic North American genus, peculiar and confined to the Nearctic Region. On the basis of structure, particularly that of the females, two distinct groups are easily recognizable: these may be accorded subgeneric status and are differentiated in the foregoing key on a preceding page. The species of *Aphilanthops* are fossorial myrmecotherous forms; one species, *A. frigida* (Smith), apparently restricts its attention largely if not wholly to queen ants.[11] Only one species, *Aphilanthops (Aphilanthops) frigida* (Smith), occurs in the eastern United States. The remaining ten forms recognized by Dunning in his monograph of the genus[12] are confined largely to western North America. To these may now be added the following distinctive Arizona species.

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[4]Ohio State Univ., Abstr. Doct. Dis., no. 46, p. 51, (1945).

[5]Trans. Ent. Soc. London, 1930, pp. 95-131.

[6]Faune de France, X, pp. 44-47, (1925).

[7]Wisconsin Geol. & Nat. Hist. Surv., Bull. no. 2, (Sci. Ser. 1), pp. 117-124, (1898). *V. et.*: Wasps, Social and Solitary, pp. 154-167, (1905).

[8]Wasp Studies Afield, pp. 109-117, (1918).

[9]Ann. Rept. Smithson. Inst., 1922, pp. 363-376. *V. et.*: The Witchery of Wasps, pp. 92-140, (1929).

[10]*Cf.*: Janvier, Ann. Sci. Nat., Zool., (10), XI, pp. 144-151, (1928).

[11]*Cf.* Wheeler; Journ. Animal Behavior, III, pp. 374-387, (1913); *or* Foibles of Insects and Men, pp. 71-82, (1928).

[12]Trans. Amer. Ent. Soc., XXV, pp. 19-26, (1898).

Aphilanthops (Clypeadon) phoenix Pate, new species

This large and handsome Arizona species is readily distinguished from all other forms of *Clypeadon* by its bituberculate clypeus, polite ocellar and post-ocellar calli, and striking livery.

Type.— ♀ ; PHOENIX, MARICOPA COUNTY, ARIZONA. Elevation, 1100 feet. July 7. [Academy of Natural Sciences of Philadelphia, Type no. 10600.]

Female. Length 13 mm. Black; the following citrinous: a small spot at base of mandibles; clypeus laterally on each side with a spot; scapes except base and apex; pronotum dorsally, pronotal tubercles; tegulae and axillary sclerites; axillae; anterior half of scutellum; postscutellum; a small spot dorsolaterally on each side of propodeum; abdomen with a large ovate spot laterally on each side; all tibiae with a longitudinal stripe on outer broad fasciae almost covering them except second which is narrowly interrupted medially; third sternite with a small spot laterally on each side of first tergite, the second to fifth tergites with faces. Castaneous: mandibles except piceous apices; clypeal flange; base and apex of scape, pedicel and first flagellar article; last abdominal segment and all sternites.

Head broader than high in anterior aspect. Front and clypeus with a moderately heavy vestiture of rather long appressed silvery hair; vertex more sparsely clad; temples with a thin clothing of long shaggy, silvery hair. Front with moderate, distinct, rather close punctures; rather strongly tumid between and above antennal sockets: interantennal line almost three-fourths (0.73) the antennocular distance; front very broad, the upper interocular distance almost one and a half (1.485) times the vertical eye length, the lower interocular distance almost one and seven-tenths (1.693) the vertical eye length. Vertex punctate like front; ocelli in a subequilateral triangle, the postocellar line three-fifths the ocellocular distance, posterior ocelli with a large, crescentic, glabrous, impunctate, polite callus along their inner margins; mediposteriorly with a large, lenticular, glabrous, impunctate, polite callus; posteriolateral angles of head tumid, and more sparsely punctate than remainder of vertex and temples which are moderately finely punctate. Antennae with scapes short, obterete, one-third the vertical eye length; pedicel subglobose, one-third the length of scape and one-fourth the length of first flagellar article; flagellum not clavate but tapering somewhat toward apex, the first segment elongate, twice the length of second segment which is equal in length to the third and following segments, penult segment five-sixths the length of last article which is equal in length to the second segment. Clypeus flat, punctate like front, with a broad and very shallow vertical furrow between the median and lateral lobes, disc of median lobe with a

pair of large acute tubercles medially, the apical margin flanged, entire, edentate.

Thorax and propodeum with a moderate vestiture of decumbent silvery hair. Mesonotum with rather coarse and close punctuation; axillae impunctate; scutellum flat, impunctate discally, bisected by a fine impressed line; postscutellum tumid, almost impunctate. Mesopleura coarsely punctate, closely and rugosely so on prepectus, dorsally and posteriorly, but with punctures separated below; metapleura subnitidous. Propodeum rather closely, rugosely punctate throughout; trigonal area of dorsal face bisected on posterior half by a shallow, transversely striate groove, ending in a polite, impunctate prominence posteriorly.

Middle and hind legs with tibiae and tarsi strongly spinose.

Abdomen with a moderate vestiture of decumbent silvery hair; weakly constricted between first and second tergites. Tergites and sternites with separated rather coarse punctures. Pygidium subquadrate, strongly concave; the disc subfulgid and subgranulate; apical margin bisinuate; the lateral margins with a small, acute subapical tooth. Hypopygium elongate subrectangular, strongly concave; the disc polite, impunctate; lateral edges strongly raised and thickened; apical margin subquadrately excised medially.

This distinctive southwestern species is known only from the unique female described above.

BOOKS AND WORLD RECOVERY

The desperate and continued need for American publications to serve as tools of physical and intellectual reconstruction abroad has been vividly apparent by appeals from scholars in many lands. The American Book Center for War Devastated Libraries has been urged to continue meeting this need at least through 1947. The Book Center is therefore making a renewed appeal for American books and periodicals—for *technical and scholarly books and periodicals in all fields* and particularly for *publications of the past ten years.*

The generous support which has been given to the Book Center has made it possible to ship more than 700,000 volumes abroad in the past year. It is hoped to double this amount before the Book Center closes. The books and periodicals which your personal or institutional library can spare are urgently needed and will help in the reconstruction which must preface world understanding and peace.

Ship your contributions to the American Book Center, c/o The Library of Congress, Washington 25, D. C., freight prepaid, or write to the Center for further information.

A NEW BEE FROM THE MARSHALL ISLANDS

BY T. D. A. COCKERELL
Boulder, Colorado

Dr. Maurice James has kindly submitted to me a small series of bees from the islands of the Pacific, belonging to the Colorado State College at Fort Collins. These include eleven female specimens of a small *Megachile* from the Marshall Islands, which has the following characters:

Megachile loiensis Cockerell, new species

Female. Length about 12 mm.; black, with short broad abdomen; mandibles broad, without well developed teeth; clypeus densely punctured, mainly dull, but shining at middle of margin, and in middle of upper part; supraclypeal area with the disc polished and impunctate; antennae black; head and thorax with short white hair, dense at sides of face, no dark hair on thorax above; an interrupted band of white hair in suture between mesonotum and scutellum; mesonotum and scutellum dull; scutellum swollen in middle, but not conspicuously so; tegulae black; wings rather dilute fuliginous; legs black, femora with white hair beneath; hind tibiae with a conspicuous pale fringe in front; hair on inner side of hind tarsi entirely black; hind basitarsi large and broad; abdomen cordiform, shining above, the tergites with narrow hair-bands, which are dull whitish, more or less reddish, especially at sides; ventral scopa bright red, black on last sternite; tufts of hair at sides of first tergite entirely pale.

MARSHALL ISLANDS: LOI ISLAND (type locality), Jan.-Feb. 1945, many specimens; one from Bwaja I. These islands are in the Kwajalein Atoll. All collected by H. S. Wallace.

This runs in my table to *M. diligens* Smith, from the Hawaiian Is., and at first I supposed it to be that species. There is a series of closely related species in the Pacific Islands, and these may be distinguished from *M. loiensis* as follows:

M. diligens Smith. (Hawaiian Islands). Female. The two apical teeth of the mandibles acute; hair on tarsi beneath reddish brown; claws ferruginous, tipped with black (black in *M. loiensis*); wings subhyaline; abdominal bands distinctly red.

M. hedleyi Rainbow. (Funafuti). Female. Tergites fringed with short black hairs; under side of tibiae and tarsi ferruginous. Miss Cheesman (1936) treats this as a subspecies of *M. diligens*, and says the lateral tufts on first tergite are dark, with light hairs on outer side. The wings are dark fuscous.

M. buxtoni Perkins and Cheesman. (New Hebrides). Females very hard to separate from *M. hedleyi*, but the lateral tufts on first tergite light. Males more easily separated, and nesting habits distinct. This is treated as a subspecies of *M. diligens*.

M. doanei Ckll. (Tahiti). Described from the male. Black hairs on disc of mesonotum and middle of pleura; hair on inner side of hind tarsi copper red.

M. vavauensis Ckll. (Vavau, Tonga Is.). Described from the male. Scutellum and disc of mesonotum with long black hairs; bands on tergites only present at sides, very bright red.

M. calens Ckll. (New Hebrides). Much black hair on scutellum. Miss Cheesman (1936) treats *M. calens* and *M. vavauensis* as synonyms of *M. hedleyi*, but this is not correct.

M. woodfordi Ckll. (Solomon Is.). Female. Hair of face and vertex black; hair of mesonotum and scutellum black; hair of tarsi bright fox-red.

Miss Cheesman states that *M. hedleyi*, which she reports from the New Hebrides, nests in dry logs on coral beaches. It is easy to imagine that occasionally such logs would be washed into the seas, and might very rarely reach some other island with its bees alive. Thus the islands might have been colonized, but under conditions of isolation the populations have become appreciably different. I have treated these different forms as species, but Miss Cheesman has regarded them as subspecies of *M. diligens*.

Among the other bees submitted to me by Professor James, there are a few which deserve mention.

MEGACHILE FINSCHI FRIESE*

Female. About 15 mm. long; tergites 3 to 5 with dense red hair; ventral scopa black. One female from Gusika, New Guinea, August, 1944 (W. L. Howe). Friese described this (1911) from one female taken at Finschhafen, which is practically the same locality. Apparently the Gusika specimen is the second known.

* I was much pleased, a few days ago, to receive a postcard from Dr. Friese, who is still at his home in Mecklenburg-Schwerin (Kirchenstr.).

Crocisa caeruleifrons W. F. Kirby

Morotai Is., Moluccas, May 10, 1944 (Jack Jones). Described from Timor Laut, about 700 miles to the south. I have examined the type.

Crocisa novaehollandiae Lepeletier

Two specimens of *Crocisa* from Gusika, New Guinea, 1944 (W. L. Howe) have been in alcohol and their bright colors are spoiled, but they must be referred to *Crocisa novaehollandiae* Lepeletier, which, in spite of its name, was never taken in Australia.

Anthophora spp.

A very fine female *Anthophora* from Gusika (Howe) seems to be new, as the hair on outer side of hind tibiae is entirely light red, and the broad tegumentary bands of abdomen (on tergites 1-4) are beautiful light emerald green. The hair of the thorax above is dense and light red. The clypeus has a reversed light T-mark, and the supraclypeal mark is strongly angulate above.

This is one of the forms which would be classed by authors as varieties or races of *A. zonata* L., but I think it is a distinct species. I do not give it a name, as Mr. T. Rayment wrote an elaborate paper on the *Anthophora* species of Australia and the Oriental Region, which he sent to Buitenzorg, Java, to be published. Soon after it reached Java the Japanese took over the island, but Mr. Rayment was informed that they published it, though at the time of writing he had not been able to procure a copy.

There is a second, smaller *Anthophora* from Gusika, with clear white hair on outer side of hind tibia. It is in very poor condition. In my key it runs to *A. zonata* L. (*pulchra* Smith).

Personal Note

Dr. E. G. Linsley of the University of California will spend the year 1947-48 on sabbatical leave with headquarters at the American Museum of Natural History in New York. Dr. Linsley leaves on June 16 and will study at various universities on the way east. His year of study will be devoted to completion of a monograph of North American Cerambycidae.

DESCRIPTIVE NOTES ON TWO SPECIES OF ANDRENA FROM CALIFORNIA
(Hymenoptera: Apoidea)

BY U. N. LANHAM
University of California, Berkeley

Described below are the previously undescribed sexes of two species of *Andrena*. Neallotypes are deposited in the California Academy of Sciences, San Francisco.

Andrena dinognatha Timberlake

Andrena (*Micrandrena*) *dinognatha* Timberlake, 1938, Pan-Pacific Entom., 14:26, male.

Female. Integument black; pubescence light fulvous, except face and cheeks with hair all black, vertex with hair mixed light and dark, pleura with hairs mostly blackish, dorsal fringe of propodeal corbiculum with mixed light and dark hairs, and tibial scopa dark fulvous with a few blackish hairs above. *Head* wider than thorax; flagellum brownish toward tip, first segment slightly longer along outer margin than two following together; fovea narrow, occupying less than half the distance between eye and antennae, extending downward as far as lower margin of antennal insertions; clypeus impunctate, so strongly reticulate as to appear granular, process of labrum short, broadly triangular, narrowly rounded at tip. *Mesonotum* strongly reticulate, very weakly, rather sparsely punctured, clothed with rather sparse, long pubescence; metanotum reticulate, impunctate; propodeal triangle finely sculptured, poorly defined; propodeal corbiculum moderately well developed, with compound hairs throughout its face; wings moderately darkened at tips, second submarginal cell square, receiving recurrent nervure well beyond middle, basal nervure meeting nervulus; middle and hind basitarsi rather slender; tibial scopa with hairs of outer face simple, those of posterior and anterior margins compound; floccus of trochanter nearly perfect, fairly well developed. *Tergites* strongly reticulate, somewhat shining, impunctate; first two tergites sparsely clothed with long, erect hairs, the remainder with sparse, inconspicuous short hairs; no apical hair bands; caudal fimbria blackish-brown. Length about 9 mm.; anterior wing 7 mm.

Neallotype female (Calif. Acad. Sci., Ent., No. 5716): Davis, California, March 6. 1940. G. E. Bohart; dug from same nest

as a male *dinognatha*. Two additional females, same locality and date, one taken in copulation with male.

The other two females of the series differ from the neallotype by having the recurrent nervure meeting the second submarginal cell only slightly beyond the middle.

The characters of the female indicate that this species cannot be placed in the subgenus *Micrandrena*. It is very near *A. anisochlora* Ckll., differing by the pure black tergites, the weak punctures of the mesonotum (impunctate in *anisochlora*) and by the dark hairs of the pleura. It may be distinguished from a series of non-metallic, medium-sized *Andrena* which also have long erect hairs on the first one or two tergites, represented by species such as *A. ribifloris* Ckll. and *A. harveyi* Vier., by the pointed process of the labrum (more or less bilobed in these latter species). *A. macrocephala* Ckll. differs by its larger size, dense notal pubescence, and rudimentary propodeal corbiculum; the male of *macrocephala*, although resembling *dinognatha* in having a wide head and yellow clypeus, does not have the clypeus produced into lateral lobes and has the tip of the eighth sternite narrowly pointed (deeply emarginate in *dinognatha*).

Andrena (Platandrena) orthocarpi Cockerell

Andrena (*Platandrena*) *orthocarpi* Cockerell, 1936, Pan-Pacific Entom., 12:147, female.

Male. Similar to female, except for the usual sexual differences and with tergites almost entirely lacking the apical hair bands of the female. Pubescence light grayish, except for black hairs on head at sides of face, about bases of antennae and on upper cheeks. Cheeks narrow, only slightly broader than eyes, widest near upper end of eyes, rounded behind; flagellum with first segment slightly shorter along outer margin than second, middle segments slightly longer than wide; mandibles short. Ground sculpture of integument strongly reticulate, but somewhat shining, as in female. Length about 7 mm.; anterior wing 6 mm.

Neallotype male (Calif. Acad. Sci., Ent. No. 5717): Collected in copulation with female, 1 mile west of Orinda Crossroads, Contra Costa County, California, March 19, 1947, on *Ranunculus californicus* Benth., by J. W. MacSwain. Also 3 males, 4 females at Berkeley, California, March 11, 1947, on *Ranunculus* (J. W. MacSwain). None of these females carried pollen.

The male differs from the other *Platandrena* of similar size,

A. nasonii Rob., and *A. pensilis* Timb., by the black hairs of the head (all pubescence of head light in these two species), and also from *nasonii* by having the parapenial lobes of the genital capsule very slightly, rather than strongly, produced. From the larger *A.* (*Platandrena*) *angustitarsata* Vier. (about 9 mm.) it differs by the more shining mesonotum and tergites, and by the peculiar basal plate of the eighth sternite, which is widest at the proximal one-third in *orthocarpi* and widest at the distal one-third in *angustitarsata.*

A SIMPLE METHOD OF MOUNTING APHIDS

BY WILLIAM P. NYE
Utah State Agricultural College, Logan

Recent favorable comments have been received from Professors E. O. Essig and M. A. Palmer, and others, on aphid mounts made for Dr. G. F. Knowlton. In addition, several requests have been received for information concerning the mounting technique used. This has prompted the presentation of the following information:

Fresh specimens, or more commonly those preserved in 70-75 percent alcohol, are immersed directly in a 10 percent solution of KOH (or NaOH) in Syracuse watch glasses and placed in a warming oven, or the aphids may be contained in evaporating dishes and boiled over a flame or hot plate. The specimens soon become relaxed and are cleared to the desired degree. A medicine dropper or a fine pipette, is used to drain off the liquid each time from the Syracuse glass, and to replace it with the reagent which follows each time in processes of clearing and premounting. This procedure prevents injury which otherwise may result from moving specimens from one dish to another. Following KOH solution, transfer is made to 10 per cent acetic acid in which the KOH solution is teased or pressed out. The specimens then are flooded with fresh glacial acetic acid for 10 minutes. While in this solution the aphids may be stained, if desired, by adding acid fuchsin or alcohol fast green or other stain. Next the specimens are covered with a very thin and fluid mixture of Canada balsam and carboxylol (pure carbolic acid,

crystals, 1 part; xylol, 3 parts by volume; and sufficient Canada balsam to make a thin and fluid mixture) for 10 minutes. The premounting treatment prevents shrinking and the formation of empty spaces or bubbles in the legs, antennae, and other parts of the aphid body. The dilute premounting mixture appears to facilitate the rapid infiltration of balsam in all parts of each aphid specimen, before it is placed into the mounting medium. Apparently the lack of balsam infiltration is an important cause of shrinking and other defects. Transfer specimens into Canada balsam. The number per slide will depend on the size of the aphids, number of specimens and forms present, and size of the cover glass used; usually from one to five or six specimens. The mounting medium should be of such consistency as not to spread out too freely on the glass slip when the specimens are arranged in it immediately before laying down the cover glass.

A NEW PTERODONTIA FROM NEW GUINEA
(Diptera, Acroceratidae)

BY CURTIS W. SABROSKY
Bureau of Entomology and Plant Quarantine, Agricultural Research Administration, United States Department of Agriculture

A strikingly distinct, undescribed species of *Pterodontia* Gray was recently sent me for determination by Dr. Edward S. Ross. This is believed to be the first record of the genus from the islands of the South Pacific, though several species are known from Australia and southern Asia. The present species is unique in its possession of unusually long squamae, as well as in the contrast of entirely shining black body and pale yellow legs.

Pterodontia longisquama Sabrosky, new species

Male. Body entirely black, thickly covered with unusually long, erect, black hair, of which the longest (on the second to fourth segments of the abdomen) are equal to the combined length of the two proximal segments of a hind tarsus. Genitalia pale yellow with yellow hairs.

Coxae and trochanters black to brownish, the rest of the legs entirely bright pale yellow, only the distal tarsal segment, the pulvilli, and the claws light brown, the latter black-tipped. The

legs are covered with bright yellow hair, heightening the contrast with the thorax.

Wings brown, apically somewhat paler, the veins deep yellow to brownish. Venation like that of *P. mellii* Erichson and *P. flavipes* Gray, except the anal vein does not quite reach the margin of the wing, the anal cell open; the costa is only slightly bent forward at

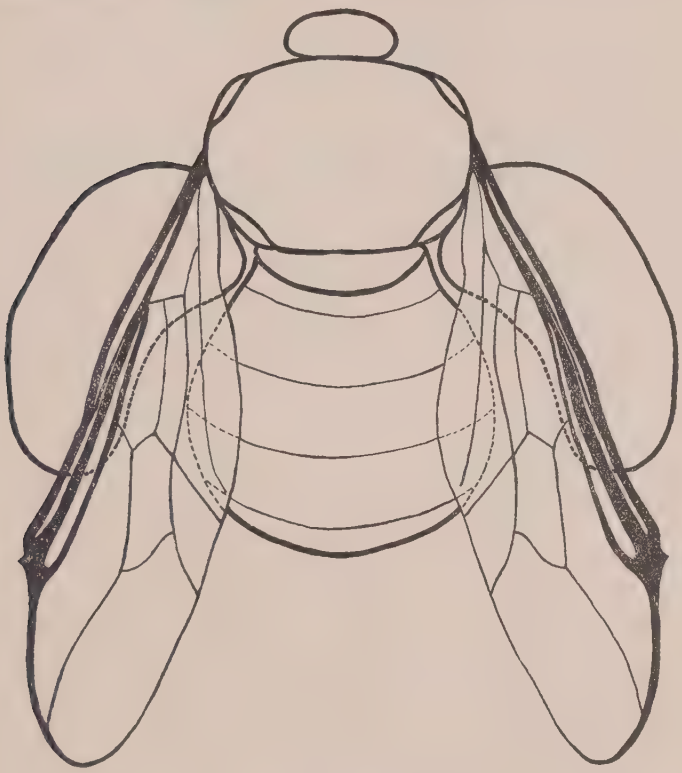


Fig. 1. *Pterodontia longisquama* Sabrosky, n. sp.

the costal tooth. Squamae dark brown, covered with dark hair, each squama elongate, nearly half as long as a wing, and flared upward along the outer margin so as to project above the level of the wing. Halteres with black knob and yellow stalk.

Length of body, 5 mm.; of wing, 6 mm.; of squama, 2.9 mm.

Holotype, male, FINSCHHAFEN, NEW GUINEA, April 10, 1944 (E. S. Ross). Type in the collection of the California Academy of Sciences.

A NEW GENUS (CRASSANA), NEW SUBGENUS (MACRASANA) AND NEW SPECIES OF NORTH AMERICAN LEAFHOPPERS

(Homoptera-Cicadellidae)

BY DWIGHT M. DELONG AND RUTH V. HERSHBERGER
Ohio State University

Several years ago Dr. Ball described a species of North American leafhopper from the southwestern United States which he named *Eutettix goniana*. Collections made in Mexico since 1939 have revealed this as a common and widespread species. A study of this species has indicated it does not belong to Eutettix, although closely related. Hepner* in a recent monograph of Eutettix has also stated that it does not belong in this genus. Another species taken only at Chilpancingo, Gro. resembles *goniana*, but superficially.

The head structure is quite different and the genital structures of the male are entirely different. It is apparently undescribed. As a result of these studies it has been decided to erect the genus *Crassana* to include *goniana* and a subgenus *Macrasana* to include the new species which is described here as *marginella*.

Crassana DeLong and Hershberger, new genus

Related to *Eutettix*. The vertex is sloping, then rounding to front forming a rather thick rounded marginal area. The vertex is parallel margined and is broad and short, more than three times as broad between eyes at base as median length. The venation is simple. The clypeus is narrower at base than at apex.

Genotype: *Eutettix goniana* Ball.

CRASSANA GONIANA (BALL)

Eutettix goniana Ball, Florida Entomologist, 15:1, 1931.

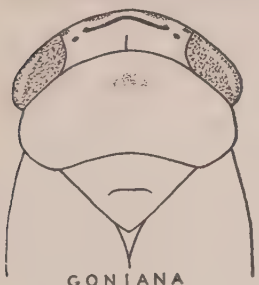
This is a wedge-shaped species with a broad head and a marginal black stripe. Length 5-5.5 mm.

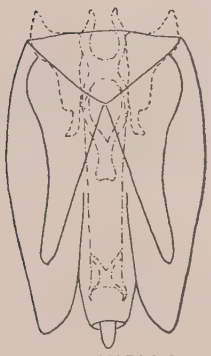
The vertex is broad, short, almost parallel margined, more than three times as wide between eyes at base as median length.

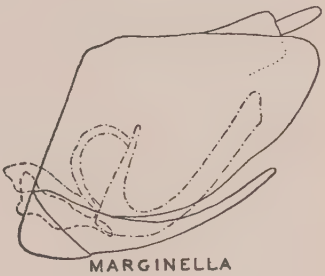
Color: Vertex yellowish with a narrow black transverse band

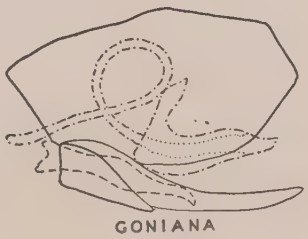
* Hepner, L. W. Univ. of Kansas Sci. Bull. 28:(pt. II, No. 13), 253-293, 1942.

just above margin extending between ocelli. Pronotum yellowish to brown, disc usually darker. Scutellum yellowish. Elytra yellowish subhyaline, veins pale, inconspicuous, claval area infuscated.









Face pale with faint arcs and a pale brown line just beneath margin.

Genitalia: Female last ventral segment broadly excavated with a median produced spatulate process at middle which extends beyond the posterior margin of segment. Male plates long, tapered to acutely pointed apices. Aedeagus rather short and broad in

lateral view with a dorsally projecting process. The apex is narrowed to a blunt tip.

This species was described from specimens collected at Patagonia, Arizona. It has been found abundantly in Mexico and specimens are at hand from the following localities: Coyuca-Catalan, Gro., August 24, 1930 (M. F. 1771), El Mante, Tamaul., October 26, 1930 (M. F. 1775), Cuautla, Mor., August 27, 1937 (M. F. 6247), Pandancuarco, Gro., August 28, 1930 (M. F. 1785), Atencingo, Puebla, July 19, 1930 (M. F. 1703), Zirandaro, Gro., August 29, 1930 (M. F. 1786), Los Mochis, Sinaloa, May 16, 1930 (M. F. 1645) by Dampf; Iguala, Gro., September 11, 1939, and October 22, 1941, Tuxpan, Mich., October 5, 1941, by Plummer, Good, Caldwell and DeLong; Mexico City, September 9, 1936, and September 16, 1936, by Stone; Valles, S. L. P., August 28, 1939, by DeLong.

Macrasana DeLong and Hershberger, new subgenus

Related to *Crassana* but with the vertex bluntly angled with the front so as to form a definite margin. The vertex is short and broad, about three times as wide as long, almost parallel margined. Venation simple. Face short and broad.

Genotype: *Macrasana marginella* n. sp.

Crassana (Macrasana) marginella DeL. and H., new species

Resembling *goniana* superficially but with vertex angled with front, vertex more produced at middle, marginal line heavier and extending to eyes and with distinct male genital structures. Length, male 4.5 mm.

Vertex short and broad, a little longer at middle than next to the eyes, almost three times as wide between eyes at base as median length.

Color: Golden brown, vertex with a rather heavy black transverse marginal line just above margin extending from eye to eye. The pronotum has the disc and posterior portion dark brown, smoky. Scutellum golden brown. Elytra brownish subhyaline, apex of clavus darker. Face dark brown with a white band on margin and a paler area at base of clypeus.

Genitalia: Male plates long, tapered to narrow blunt apices. Styles with narrow apical portions. Aedeagus in lateral view rather long, about uniform in thickness throughout except the dorsal projection at base which is long and narrow. The aedeagus proper extends dorsally and caudally.

Holotype male collected at CHILPANCINGO, GRO., October 25, 1941, by Good and DeLong.

NOTES ON MIGRATIONS OF THE PAINTED LADY BUTTERFLY IN 1945

BY JOHN W. SUGDEN*, ANGUS M. WOODBURY AND CLYDE GILLETTE
University of Utah, Salt Lake City

After an absence of four years, emigrational flights of the Painted Lady Butterfly, *Vanessa cardui* (L), again appeared in Utah. Previous such dispersal flights were reported in 1924, 1930, 1931 and 1935 by Sugden (Pan-Pac. Ent., 13:109-110) and in 1941 by Woodbury, Sugden and Gillette (Pan-Pac. Ent., 18: 165-176). Available information was summarized by Williams (Ann. Ent. Soc. Amer., 31:219-223).

The reappearance in Utah was heralded by a similar movement along the Pacific coast. On March 28, 1945, C. H. Abbott, University of Redlands, reported to Woodbury that a migration of the butterflies had been in progress in California since March 12th. He states, "The migration is west to Hermosa Beach and north to the middle of the Mohave Desert, in both instances beyond the extent of the 1941 migration." If the 1945 movement in California was more extensive than in 1941, it was in contrast with the movement in Utah where it was only a fraction of the previous one.

The principal flight at Salt Lake City and vicinity occurred on April 22, 1945, although vanguards probably arrived two or three days earlier. Gillette noted two butterflies on April 19 and 20, but saw no flight in force until April 22. Ellis R. Wilson informed C. W. Lockerbie that the largest concentration of butterflies occurred on his farm near Centerville in Davis County, north of Salt Lake City, on April 21 and 22, when he noted butterflies concentrated around his apricot trees which were in bloom, an average of about 10 butterflies per tree.

Several observers noted them in Salt Lake City on April 22. Gillette noted on that date that on a north-south line, thirty paces long, repeated counts gave an average of 23 butterflies per minute passing the site. They were flying approximately northeast and varied from a few degrees east of north to a few degrees south of east. Those flying south or west would usually change the direction after a short time to the general north-east direc-

* Deceased.

tion. The butterflies were flying fast, singly as a rule but occasionally up to five in a group, and some would stop in the open fields or alight on the moist ground. The flight lasted all afternoon and diminished as evening approached. After April 23, he observed, the flight in Salt Lake City seemed to have dispersed.

On April 22, Ashby D. Boyle reported that there was a flight in the northern part of the city and that the butterflies were crossing Eighth Avenue, an east-west street, in a northern flight. David P. Sugden reported that they were numerous in the western part of the city and that they were coming from the south.

Sugden found many in his garden, on April 22, alighting on the moist, exposed ground and on some of the plants, feeding, taking water or resting in the sun's rays especially on the sunny side of the garden house. The flight in the garden was erratic, without definite flight pattern but usually the butterflies went over the north fence when they left.

Sugden and Woodbury made observations over the eastern part of the city, then along a route south on State Street to Murray, east along 56th South to Holliday and back to Salt Lake bordering the foothills. From 5 to 10 were seen per block while travelling in a car over most of the route. The flight was not as direct as with previous flights and was generally toward the north and the northeast. In Murray and east of Holliday the majority that were flying steadily were going toward the east or slightly southeast but others were flying in other directions and many were fluttering about or feeding.

In the early morning of the next day, Woodbury found butterflies resting among the shrubbery in a gulley on the University of Utah campus. A few were resting on foliage, some were on flowers but others were selecting spots on the ground where the sun was shining directly upon it between the vegetation. Such spots appeared to be slightly warmer than surrounding areas and the butterflies alighting in such spots usually spread out the wings so that the outside was close to the ground and the inside was exposed to the direct rays of the sun. This seemed to be a "warming-up" process. They left during the day.

On April 22, C. W. Lockerbie observed the butterflies on the road from about 3 miles west of Brigham City to the Bear River Marshes, 20 miles west of the city. He counted from 5 to 10 per mile, flying against a strong north wind. This is the most north-

erly record available and the only one in Boxelder County. It is not to be supposed that the flight stopped here, however. It probably continued on at least into southern Idaho.

During the following weeks, butterflies were observed in several other places in Utah, as well as occasional scattered individuals from Salt Lake City. In response to a request for data by Woodbury in the newspapers, the butterflies were reported during the week of April 25 at the Japanese Relocation Camp at Topaz, Millard County. M. J. Madsen (in letter) stated that on April 28 the butterfles were noted, flying in a northerly direction all the way from Nephi to St. George. The next day on the return trip, they were noted near Richfield in Sevier County and northward.

On April 29, Lockerbie observed the butterflies at Payson, Utah County, and vicinity. Just before sun up, he flushed two or three from sage and rabbit brush about every ten or fifteen feet. They seemed to be resting overnight on the brush near the ground. On the old Payson-Spanish Fork road through open greesewood and salt grass country, forty-one were counted in a mile and most were feeding where dandelions were plentiful or flying north with the wind. At Lincoln Beach, Utah County, as many as ten per area of twenty square feet were feeding on a small yellowish white bloom. He also found them common in the bottoms of Spanish Fork Canyon and observed them from Jordan to Riverton, Salt Lake County, in groups up to five fluttering about each other.

Madsen noted them again, on May 5, along U. S. Highway 40 from the vicinity of Strawberry east to Vernal where they were crossing the highway flying north. Gillette noted the butterflies at several places in Zion National Park, from May 29 to June 3. These insects were definitely not in migrational flight, had torn and battered wings, had a weak flight and would fly only short distances. They were probably resting after a flight.

DISCUSSION

The flight of the Painted Lady Butterfly in Utah in 1945 was much less extensive than that of 1941. The extreme dates of observation of the butterflies extended from April 19 to June 3, 1945, but the numbers observed and reported were very meager compared with the flight four years earlier.

The main flight which seems to have reached Salt Lake City on April 22, probably represented the greatest intensity of the movement in Utah but minor flights which were not observed at Salt Lake City seem to have occurred through western Utah within the next week or two thereafter.

It seems probable that weather conditions affect the timing of flights. The next few days following April 22 were stormy and rainy in the Salt Lake Valley and the intensity of the flight rapidly diminished following the initial outburst. A drop in temperature accompanied by precipitation has been noted to nearly stop the movement.

Comparing the flights reported in past years at Salt Lake City, it appears that the height of the movement has varied in time about 6 weeks, from March 30 to May 8, as follows: April 13, 1924; March 30, 1930; May 3, 1931; May 7-8, 1935; May 8, 1941, and April 22, 1945.

During the migrations, the butterflies tend to feed upon almost any flower that is in bloom. At the time they appeared in Salt Lake City, about April 22, the first bloom of the dandelion was in progress and the flowers were available to the butterflies in roadsides, lawns and widespread extensive fields. Some orchards were also in bloom, especially apricots and cherries. As the season progressed, there was a change in bloom with the unfolding of new blossoms and withering of old ones, but they seem to have been sufficient to sustain, at least part of the migrant populations. The part that low food supply might play in decimation of the flying hordes has not been ascertained.

In 1941, it was noted that the migrants left a new generation to grow on all the thistles observed in many places in the Salt Lake region. When the first migrants appeared in 1945, none of the thistles were beyond the early rosette stage; some were just putting out the first leaves and none had begun the stalk. Apparently the thistles were not far enough advanced for oviposition and although Sugden examined many of the areas that had borne large numbers of caterpillars on the thistles in 1941, none were found at any time in 1945 although flights had passed over the areas.

The explanation appears to lie in the fact that the caterpillars in past years had been borne on the leaves of the stalk and not on the rosette, the leaves of which wither and die after the stalk

becomes established. Feeding of the larvae on the rosette at that early stage of development might hinder or prevent proper establishment of the stalk and result in failure to develop enough food for the larvae.

Report of the writers (op. cit., p. 174) on the 1941 flights indicated a characteristic pattern of movement during migration, in which the butterflies became more active during the warm parts of warm days and slowed down and stopped at night and on some cold days. Additional information is now available concerning the resting at night and on cold days. All three of the writers as well as Lockerbie observed them independently where they had been resting overnight. In addition, A. D. Boyle (field notes) "flushed" the butterflies all the day of April 21, 1935, near Vernon, Benmore and Lookout Pass in Tooele County. There was "no sun, a fairly stiff, cold wind and Painted Ladies were flushed all day, even when it was sprinkling slightly. J. L. Mullen reports much the same experience west of Utah Lake and at Alpine," Utah County.

The additional information accumulated from the 1945 migration tends to confirm the idea that these emigrations result from overcrowded areas of southern United States or Mexico; that they afford a means by which the surplus population may relieve congestion by dispersal flights; and in some cases provide a means of developing additional generations. The new generations, however, probably do not survive the severe winters of this area and since eggs are not laid until spring, there are no adults left to propagate and hence disappear. They persist farther south where adults can survive the winters.

REVIEW: CHECK LIST OF THE CICADELLIDAE

Check List of the Cicadellidae (Homoptera) of America, North of Mexico, by Dwight M. De Long and Dorothy J. Knull. Graduate School Studies. Biological Science Series No. 1. The Ohio State University Press, Columbus, Ohio. Pages V + 102. 1946. $1.50.

In 1937 De Long and Caldwell published a check list of the North American Cicadellidae which contained 145 genera and

over 1800 species. This was the first time the species of the group had been brought together since the publication of the Van Duzee catalogue in 1917 which contained some 69 genera and 700 species of leafhoppers with complete synonymy. According to the authors' statement in the Introduction, the present check list is a revision of the list as published in 1937 and contains 175 genera and 2276 species, varieties and subspecies occurring north of Mexico. Species which occur only in Mexico are omitted.

The publication is divided into 4 parts:

I. Introduction. A discussion of purpose, content and arrangement. (2 pages)

II. Check List. A preliminary arrangement of subfamilies and genera occupies the first two and a fraction pages followed by the listing of the species. The authors have attempted to arrange the subfamilies and genera to show their phylogenetic relationships. The species are listed under each genus in alphabetical order. In the author's own words, ". . . synonymy of the Van Duzee catalogue has not been repeated, but recent synonymy has been indicated as far as possible . . . " References to the original descriptions are given for the species, genera and subfamilies. The genotype is cited according to its original designation. The original genus under which a species was described is placed in parenthesis after the citation in case the species has been placed in another genus. 79 pages.

III. Key lists of Publications. Publications are cited by number in the Check List and the title to which each number refers is given in this Key List of 137 publications.

Suggested Generic Papers on North American Cicadellidae. This is a list of many of the more important recent generic papers for the convenience of readers who wish to refer to a generic treatment. 10 pages.

IV. Index to Genera. 6 pages.

The publication is of convenient size, 6 by 9 inches, with easily read type, but poorly bound with heavy paper. Drs. De Long and Knull have provided a serviceable, up-to-date check list which should be a great convenience not only to specialists in the group but also to others who are less familiar with the cicadellids.—NORMAN W. FRAZIER.

NOTES ON THE DASYMUTILLA OF THE PALO VERDE VALLEY, CALIFORNIA WITH THE DESCRIPTION OF A NEW SPECIES

(Hymenoptera, Mutillidae)

BY WILLIAM F. BARR AND PAUL D. HURD, JR.
University of California, Berkeley

The Palo Verde Valley, a narrow strip of river bottom about thirty miles long lying adjacent to the Colorado River in eastern Riverside County, California, is bounded by mountains and a mesa to the north, south and west, and by the Colorado River to the east. It has a considerable acreage of cultivated areas although the greater portion of the valley consists of mesquite, tamarisk and arrow-weed thickets. Thus the valley offers a splendid opportunity for collecting a varied population of *Dasymutilla* in large numbers.

During the writers' investigations of alfalfa problems in this valley in the summer of 1946 they acquired a collection of *Dasymutilla* that consists of nine species, one of which is described as new.

Collections were also made by E. G. Linsley, J. W. MacSwain, and R. F. Smith during the summers of 1945 and 1946 and the writers wish to thank these individuals for the use of their material and data.

All localities and dates of capture for each species have been listed since they may prove to be of assistance to future workers in correlating males and females which have been described as separate species.

Dasymutilla eminentia Mickel

Dasymutilla eminentia Mickel, 1928, U. S. Nat. Museum Bull., 143:79.

The capture of six specimens establishes the record of this species for the first time in California. It was taken at the following localities in the Palo Verde Valley: Blythe, 1 ♀, June 22, 1946 (Barr); 1 ♂, July 14, 1945 (MacSwain); 1 ♂, 1 ♀, August 9, 1946 (Barr and Hurd); 1 ♀, August 20, 1946 (Hurd). Ripley, 1 ♂, August 28, 1946 (Hurd).

One male was taken while sweeping alfalfa.

Dasymutilla atricauda Mickel

Dasymutilla atricauda Mickel, 1936, Pan-Pac. Ent., 12(2):92.

This species was described from Blythe by Mickel, additional specimens are now recorded from the type locality as follows: Blythe, 1 ♀, June 25, 1945 (Linsley); 1 ♀, August 9, 1946 (Barr); 2 ♀♀, August 13, 1946 (Barr and Hurd).

Dasymutilla magna (Cresson)

Mutilla magna Cresson, 1865, Proc. Ent. Soc. Phila., 4:385.

This well-known species was found to be rather common throughout the valley. One male was taken while sweeping alfalfa at Blythe on July 19, 1946. Previously the only California record of this species was from Brawley, Imperial County. New California records are as follows: Seven miles north of Blythe, 1 ♂, July 23, 1946 (Barr and Hurd). Blythe, 1 ♀, June 22, 1945 (Linsley); 2 ♀♀, June 22, 1946 (Barr); 1 ♀, June 23, 1945 (Linsley); 1 ♀, June 25, 1945 (Linsley); 1 ♂, 1 ♀, July 11, 1946 (Barr); 1 ♀, July 13, 1946 (Barr); 1 ♀, July 14, 1946 (MacSwain); 1 ♂, July 19, 1946 (Barr); 1 ♀, July 21, 1946 (Hurd and Smith); 1 ♀, July 26, 1946 (Barr and Hurd); 1 ♀, August 3, 1946 (Hurd); 1 ♂, August 7, 1946 (Barr); 1 ♀, August 9, 1946 (Barr). Ripley, 1 ♀, July 24, 1946 (Barr and Hurd).

Dasymutilla magnifica Mickel

Dasymutilla magnifica Mickel, 1928, U. S. Nat. Museum Bull., 143:234.

Three females of this beautiful species were taken at the following localities: eight miles north of Blythe, June 26, 1946 (Barr) and Palo Verde, August 22, 1946 (Barr and Hurd), August 27, 1946 (Barr).

In one of the specimens from Palo Verde, the dorsal abdominal vestiture is quite worn and short and is of an orange color instead of red; however, it may be readily identified by the characters as given in Mickel's key.

Dasymutilla satanas Mickel

Dasymutilla satanas Mickel, 1928, U. S. Nat. Museum Bull., 143: 239.

Dasymutilla mimula Mickel, 1928, U. S. Nat. Museum Bull., 143: 255; 1936, Pan-Pac. Ent., 12(2):94. *New synonymy.*

The male and female of this species were described by Mickel

in 1928 as separate species. In early August it was the writers' fortune to collect a copulating pair of the male (*mimula*) and the female (*satanas*) thereby establishing the correct status of the species as indicated in the synonymy above. The writers had suspected that such would be the case since the above males and females were the most commonly encountered *Dasymutilla* during the past summer.

The males were found to be common in the cultivated parts of the valley and were frequently captured in the alfalfa fields. The females, as in the case of the males, were most commonly observed in the cultivated areas of the valley, but were apparently restricted to the roads and roadside situations.

Mickel in 1936 records ten males from Blythe, additional localities and records from the Palo Verde Valley are: seven miles north of Blythe, 5 ♂♂, 3 ♀♀, July 23, 1946 (Barr and Hurd). Blythe, 1 ♂, June 22, 1946 (Barr); 1 ♂, July 11, 1946 (Barr); 3 ♂♂, July 11, 1946 (Barr); 3 ♂♂, July 13, 1946 (Barr); 2 ♂♂, 1 ♀, July 14, 1945 (MacSwain); 1 ♀, July 19, 1946 (Barr); 3 ♂♂, 1 ♀, July 21, 1946 (Barr and Hurd); 1 ♂, July 26, 1946 (Barr and Hurd); 2 ♂♂, July 27, 1946 (Barr and Hurd); 1 ♂, 1 ♀, August 1, 1946 (Barr and Hurd); 1 ♂, 7 ♀♀, August 3, 1946 (Barr and Hurd); 1 ♀, August 4, 1946 (Barr); 3 ♀♀, August 5, 1945 (MacSwain and Smith); 2 ♂♂, August 6, 1946 (Barr); 1 ♂, August 7, 1946 (Barr and Hurd); 1 ♀, August 9, 1946 (Hurd); 1 ♂, August 17, 1946 (Hurd); 4 ♀♀, August 19, 1946 (MacSwain); 2 ♂♂, 1 ♀, August 20, 1946 (Barr and Hurd); 1 ♀, August 22, 1946 (Barr). Ripley, 1 ♀, June 25, 1946 (Barr); 1 ♂, 1 ♀, July 2, 1946 (Barr); 1 ♂, 2 ♀♀, July 14, 1946 (Barr and Hurd); 1 ♂, 1 ♀, August 12, 1946 (Barr and Hurd); 7 ♂♂, 1 ♀, August 16, 1946 (Barr and Hurd); 3 ♀♀, August 28, 1946 (Barr and Hurd). Palo Verde, 1♀, August 20, 1946 (Barr).

Dasymutilla gloriosa (Saussure)

Mutilla gloriosa Saussure, 1867, Ann. Soc. Ent. Fr., (4) 7:359.

This distinctive xerophilic species was uncommonly encountered during the summers of 1945 and 1946. It appeared most abundantly toward the end of this past summer.

The Palo Verde Valley records include: seven miles north of Blythe, 1 ♀, July 23, 1946 (Barr). Blythe, 1 ♀, June 24, 1945

(Linsley); 1 ♀, July 21, 1946 (Barr). Ripley, 1 ♀, August 19, 1946 (Barr); 2 ♀♀, August 28, 1946 (Hurd). Palo Verde, 1 ♀, August 10, 1946 (MacSwain).

Dasymutilla heliophila (Cockerell)

Sphaerophthalma heliophila Cockerell, 1900, Entomologist, 33:65.

This species was not taken by the writers, its occurrence in the Palo Verde Valley is based on the record of Mickel[1] of specimens taken at Blythe.

Dasymutilla arenivaga Mickel

Dasymutilla arenivaga Mickel, 1928, U. S. Nat. Museum Bull., 143:278.

Arenivaga was quite commonly collected throughout the Palo Verde Valley at the following localities: seven miles north of Blythe, 1 ♀, July 23, 1946 (Barr and Hurd). Blythe, 1 ♀, June 24, 1945 (Linsley); 1 ♀, June 25, 1945 (Linsley); 1 ♀, July 13, 1946 (Barr); 2 ♀♀, August 3, 1946 (Barr and Hurd); 1 ♀, August 4, 1946 (Hurd); 1 ♀, August 5, 1945 (Smith and MacSwain); 2 ♀♀, August 9, 1946 (Barr and Hurd); 1 ♀, August 20, 1946 (MacSwain); 1 ♀, August 22, 1946 (Barr); 4 ♀♀, August 27, 1946 (Barr and Hurd); 1 ♀, August 28, 1946 (Barr). Ripley, 1 ♀, August 14, 1946 (Barr); 2 ♀♀, August 28, 1946 (Hurd). Palo Verde, 1 ♀, August 27, 1946 (Hurd); 1 ♀, August 31, 1946 (MacSwain).

Dasymutilla paranocturna Barr and Hurd, new species

Female. Length 9 mm. Dark mahogany red, eyes enlarged; vertex, dorsum of thorax and second abdominal tergite rather sparsely clothed with erect and recumbent, rather long, ashy-white pubescence; frontal area of head clothed with recumbent sienna pubescence; abdominal segments 3-5 densely clothed with erect, burnt umber pubescence; remainder of insect clothed as abdominal segments 3-5, but pubescence sparser.

Head very dark mahogany red, mandibles weakly unidentate, acuminate at apex, basal half dark mahogany red, apical half black, clothed exteriorly with a few, short burnt umber hairs; clypeus bidentate medially on apical surface, clothed with a thick fringe of rather short burnt umber hairs; antennae dark mahogany red, scape clothed with numerous, minute burnt umber hairs,

[1] C. E. Mickel, 1936, Pan-Pac. Ent., 12(2):94.

first segment of flagellum slightly shorter than twice its own width at apex; antennal scrobes distinctly carinate above, the carina extending nearly to the inner eye margin; eyes prominent, unusually large, the distance between the posterior margin of the eye and the postero-lateral angles of the head not greater than one-half diameter of eye; front and vertex with rather large, confluent shallow punctures; gena sparsely punctured with small non-confluent punctures; frontal area of head densely clothed with recumbent sienna pubescence; vertex sparsely clothed with a few, ashy-white recumbent hairs. *Thorax* dark mahogany red, slightly broader than long; dorsum sculptured with quite large, shallow confluent punctures, sparsely clothed with erect and recumbent ashy-white pubescence; scutellar scale evident; propleuron with large irregular punctures, clothed with a few, short, erect burnt umber hairs; anterior half of mesopleuron nearly glabrous, bounded caudally by a dorso-ventral fringe of very long burnt umber hairs; posterior half of mesopleuron with coarse, irregular and somewhat scattered punctures; dorsal surface, sides, and posterior surface of propodeum sculptured with rather large confluent punctures, dorsal surface clothed rather sparsely with mostly erect, rather long ashy-white hairs, some of which are tinged with yellow; legs dark mahogany red, clothed with erect burnt umber hairs. *Abdomen* dark mahogany red, first tergite glabrous except at apical and lateral margins where bordered by a row of small, confluent circular punctures, apex clothed with transverse row of short, erect sienna hairs, sides sparsely clothed with a few, erect rather long hairs; second tergite densely sculptured with confluent punctures, sparsely clothed with erect and recumbent ashy-white hairs, except at apex and sides where glabrous; tergites 3-5 densely clothed at bases with erect burnt umber pubescence; second sternite sculptured with rather small non-confluent punctures which are more or less transversely arranged, sparsely clothed with a few, short burnt umber hairs; remaining sternites similarly clothed as the corresponding tergites; pygidium distinctly longitudinally rugose.

Holotype, ♀, (No. 5619, California Academy of Sciences, Entomology) from BLYTHE, RIVERSIDE COUNTY, CALIFORNIA, July 6, 1946, collected by W. F. Barr. One paratype, ♀, from SAN FELIPE CREEK, IMPERIAL COUNTY, CALIFORNIA, June 17, 1940, collected by R. G. Dahl.

D. paranocturna is known only from two female specimens and structurally appears to be most closely related to *D. nocturna* Mickel and runs to that species in Mickel's key[2]. It differs from *nocturna* by possessing shorter, ashy-white and burnt umber

[2] Mickel, C. E., 1936, New species and records of nearctic mutillid wasps of the genus *Dasymutilla*. Ann. Ent. Soc. Amer., 29:29-35.

pubescence on the dorsal surfaces instead of the long, contrasting black and white pubescence. *Paranocturna* further differs in that the coloration of the integument is distinctly reddish, not tending toward black as does *nocturna*.

The paratype of this species is somewhat larger than the holotype, measuring 14 mm. in length.

Dasymutilla megalopthalma Mickel

Dasymutilla megalopthalma Mickel, 1928, U. S. Nat. Museum Bull., 143:282; 1936, Ann. Ent. Soc. Amer., 29(1):60.

Megalopthalma was not commonly encountered in either year. In 1945, E. G. Linsley collected a male at Blythe on June 24 and R. F. Smith and J. W. MacSwain collected another male on August 5 at the same locality.

The writers collected but two males, one of which was taken in an alfalfa field at Blythe on August 7, the other was collected at Ripley on August 14.

International Congress of Entomology

The eighth International Congress of Entomology will be held in Stockholm, Sweden, August 9-15, 1948. The fact that all steamship sailings are currently booked to capacity for months in advance makes it seem necessary for those expecting to attend the congress in 1948 to arrange for passage as early as possible. Steamship companies have not issued sailing lists for 1948, but expect to do so in the early fall. A number of lines have listed sailings for the present season, among them, the Cunard, French, Belgian, Swedish, Norwegian, Gdynia (Polish), Holland-American, etc., the first mentioned expecting soon to have two new steamers in service. It is understood that the Thirteenth International Congress of Zoology will be held in Paris some time in July, 1948, and it is hoped that all entomologists going to Stockholm will plan to attend the Zoological Congress also in order that the interests of the entomologists may be fully represented before the more comprehensive body. Should a sufficient number of individuals indicate that they expect to sail about mid June, it may be feasible to engage passage on the same steamer. Early information as to the probable number of participants is especially desired in order that the housing committee in Stockholm may make the necessary arrangements. The undersigned, as member of the executive committee, would appreciate it if he be kept informed as early as possible as to plans of those expecting to attend the sessions.—O. A. Johannsen, *Cornell University, Ithaca, N. Y.*

UNDESCRIBED SPECIES OF TIPULIDAE FROM THE WESTERN UNITED STATES
(Diptera)

PART III

BY CHARLES P. ALEXANDER
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The preceding part under this title was published in the Pan-Pacific Entomologist, 21:91-97; 1945. At this time I am describing three new species of the genus *Tipula* from the San Bernardino Mountains, California. In July, 1946, Mrs. Alexander and I spent three days camping at East Barton Flats, on the East Fork of the Santa Ana River, at a general altitude of about 6250-6300 feet. This was close to the mountain cabins of the Melander and Sperry families, of Riverside, California, and we enjoyed and profited greatly by this visit with our good friends. On one occasion, Noël Crickmer, Melander, Sperry and I collected up the slopes of Sugarloaf Mountain, to the Little Cienaga, altitude about 7400 feet. During the remainder of the summer and fall, to the first snows about mid-October, the Sperrys continued to collect Tipulidae, chiefly at the lanterns operated at the Sperry Cabin. I am vastly indebted to all my friends above indicated for their many kindnesses, including the large series of Tipulidae that has been presented to me.

Tipula (Trichotipula) subapache Alexander, new species

Allied to *apache;* general coloration of thorax gray, the praescutum with a central paler gray stripe, the posterior sclerites of the notum with a yellow central line; antennae black, the scape chiefly yellow; femora brownish yellow, the tips narrowly blackened; wings with a strong blackish tinge, cell *Sc* and the stigma darker brown; obliterative areas conspicuous; macrotrichia in outer ends of cells R_5 and M_1; abdomen brownish black, the basal tergal rings narrowly yellow; male hypopygium with the notch of the tergite V-shaped, provided with long cylindrical blackened spines; outer dististyle nearly twice as long as broad, with long black setae; inner dististyle with its main body nearly parallel-sided, the beak short and stout, slightly upturned; outer basal lobe

large and conspicuous, flattened, exceeding one-half the length of main body of style.

Male. Length about 12.5-13 mm.; wing 11-11.5 mm.; antenna about 4 mm.

Female. Length about 14-15 mm.; wing 14-15 mm.

Frontal prolongation of head black, more chestnut brown basally above; nasus elongate, black; palpi black. Antenna with scape obscure yellow, narrowly darkened at apex; pedicel brownish black, flagellum black; flagellar segments very gently incised. Head above yellow, the sides of the posterior vertex and the genae infuscated, pruinose.

Pronotum yellow, with a dark spot on either side of the midline. Mesonotal praescutum with a broad light gray central stripe that is more or less divided by a capillary darkened median vitta; lateral stripes narrow, more brownish gray, remainder of praescutum brownish black; posterior sclerites of notum black, more or less pruinose, with a continuous yellow stripe, broader and more testaceous yellow on scutellum, very narrow on the mediotergite; scutal lobes with the gray areas more or less distinctly ringed with black. Pleura with the propleura and mesepisternum more blackened, pruinose, the mesepimeron, meron and pleurotergite paler. Halteres with the stem blackened, its base and the apex of knob yellow. Legs with the coxae blackened, pruinose; trochanters brownish yellow; femora obscure brownish yellow, the tips narrowly blackened; tibiae and tarsi obscure brownish yellow, the outer tarsal segments passing into black. Wings with a strong blackish tinge, cell *Sc* and the stigma darker brown; pale areas before and beyond stigma and as a disconnected band at cord, the latter crossing the base of cell *1st* M_2; further pale longitudinal streaks in several of the cells, especially on either side of vein *M* and as a V-shaped area in cell *1st A*; less evident pale streaks in some of the outer cells; veins brown. Macrotrichia in outer ends of cells R_5 and M_1. Venation: Sc_1 persistent; *Rs* arcuated, shorter than *m-cu*; *m* longer than petiole of cell M_1.

Abdominal tergites brownish black, at least on sides, in cases paler brown medially, the basal rings narrowly but conspicuously light yellow; basal sternites more uniformly brownish yellow, the outer segments, with the hypopygium, more infuscated. Ovipositor with both cerci and hypovalvae compressed-flattened, their tips obtusely rounded. Male hypopygium having the posterior border of the ninth tergite with a deep V-shaped notch that is provided with several long cylindrical blackened spines with blunt tips; at ends of the obtuse lobes with a small group of more conical spines. Outer dististyle moderately broad, the length nearly twice the breadth, provided with long black setae, the longest on outer margin fully as long as the width of the style. Inner dististyle with the main body nearly parallel-sided, the beak short and stout, slightly upturned; outer basal lobe large and conspicuous, flat-

tened, exceeding one-half the length of main body of style. Phallosome more or less rolled into an open tube.

Habitat. California (San Bernardino County).

Holotype, ♂, East Barton Flats, San Bernardino Mountains, altitude 6300 feet, September 22, 1946 (John and Grace Sperry). *Allotopotype,* ♀, with the type. *Paratopotypes,* 11 ♂ ♀, August 19, September 27, 1946.

This fly is closest to *Tipula* (*Trichotipula*) *apache* Alexander, of northern New Mexico, differing in details of coloration and in the structure of the male hypopygium, especially the tergite and both dististyles, particularly the large outer basal lobe of the inner style. The rather numerous California species of *Trichotipula* have been revised recently by the writer (Bull. So. California Acad. Sci., 45:1-16; 1946).

Tipula (Oreomyza) graciæ Alexander, new species

Belongs to the *marmorata* (*fragilis*) group; general coloration gray, the praescutum with four brownish gray stripes; femora brownish yellow, the tips broadly and conspicuously blackened; wings whitish subhyaline, with a pale grayish brown marbled pattern, especially pale in the costal and apical portions heavier in the medial and anal cells; abdomen brown the lateral and caudal borders of segments yellow; male hypopygium with the tergite having a low V-shaped notch, the outer angles only slightly produced; outer dististyle with the upper margin at base blackened but very obtuse; inner dististyle with the apex blackened, relatively stout, simple; eighth sternite with the caudal border produced into a low median lobe that bears about a score of long black setae.

Male. Length about 12-13 mm.; wing 13-15.5 mm.; antenna about 2.5-2.7 mm.

Frontal prolongation of head dark brown, heavily pruinose, especially above; nasus distinct; palpi black. Antennae short, scape and pedicel yellow, flagellum black; flagellar segments simple, a little longer than the verticils. Head gray, with indications of a delicate darker line on the low vertical tubercle.

Pronotum gray, the scutellum light yellow. Mesonotum gray, the praescutum with four brownish gray stripes, the intermediate pair more pruinose on anterior portions; lateral margin below the humeri blackened; posterior sclerites of notum light gray, each scutal lobe with two separate brownish gray areas; a delicate broken central dark vitta on scutellum and mediotergite. Pleura gray, with darker gray areas, most evident on the ventral sternopleurite and meron; dorsopleural region yellow. Halteres yellow,

knobs dark brown. Legs with the coxae gray pruinose; trochanters brownish yellow; femora obscure yellow basally, more darkened outwardly, the tips broadly and conspicuously blackened; tibiae brownish yellow, the tips more narrowly infuscated; tarsi brownish yellow, passing into black; claws (male) toothed. Wings whitish subhyaline, with a pale grayish brown marbled pattern, distributed about as in other members of the group, especially pale in the costal and apical portions of wing, heavier in the medial and anal cells, especially *1st A*; stigma paler brown; veins brown. Venation: *Rs* about one-half to three-fourths longer than *m-cu*; basal section of R_{4+5} short to very short; M_{3+4} very short to punctiform.

Abdomen brown, the lateral and caudal borders of the tergites yellow, the latter more distinct and becoming more extensive on the outer segments; sternites generally similar, the bases of the eighth and ninth sternites extensively blackened. Male hypopygium having the ninth tergite with a low V-shaped notch on caudal margin, the outer angles only slightly produced, not spinous; margin of notch with a few small spinous points and setae. Outer dististyle flattened, the upper margin at base blackened but very obtuse, not at all toothed; surface of style with coarse black setae. Inner dististyle heavily blackened at apex and along margins; apex relatively stout, simple; outer basal lobe a low cushion, set with several erect stout black setae, the basal portion with a small blackened lobule that is provided with microscopic blackened setulae. Eighth sternite moderately sheathing, the caudal border produced into a low inconspicuous median lobe that bears about a score of long black setae, the marginal setae of the remainder of sternite similarly long but yellow; center of disk glabrous.

Habitat. CALIFORNIA (SAN BERNARDINO COUNTY).

Holotype, ♂, 1000 SPRINGS MEADOWS, San Gorgonio Trail, San Bernardino Mountains, altitude 7700 feet, September 21, 1946 (John L. Sperry). *Paratopotypes*, 10 ♂♂, altitude 7500-7700 feet, September 20-21, 1946 (John and Grace Sperry and Noël Crickmer).

This very distinct fly is named for Mrs. John L. Sperry (Grace Herreshoff Sperry), of Riverside, California, who specializes on a study of the Lepidoptera. The Sperrys have camped and collected in hundreds of places in the West and many entomologists are greatly indebted to them for invaluable insect materials in many orders. The discovery of a member of this group of *Tipula* so far to the south was very surprising. The only other species at present known from Western North America are *Tipula* (*Oreomyza*) *fragilina* Alexander, Alaska to Colorado, along the

Rocky Mountains, and *T.* (*O.*) *phoroctenia* Alexander, from British Columbia, eastward to Maine, in the Canadian Zone. All three species are on the wing in the autumn. The species are well distinguished among themselves by hypopygial characters, particularly the dististyles and eighth sternite.

Tipula (Lunatipula) dido Alexander, new species

Mesonotum chiefly gray, the praescutum with four entire reddish brown stripes, the intermediate pair narrow; antennae relatively short, basal three segments yellow, remainder of flagellum black; flagellar segments only moderately incised; femora yellow, weakly darkened at tips; wings with a weak brownish tinge, the obliterative area before cord conspicuous; abdomen, including hypopygium, dull yellow, scarcely patterned; ninth tergite almost divided medially by pale membrane, the lower outer angle of each lobe produced into a stout blackened spine; inner dististyle with beak long and slender, widely separated from the small lower beak; posterior crest of style produced into a triangular point; phallosome consisting of four rods in pairs of two each; eighth sternite sheathing, each outer angle with a strong fasciculate bristle; a broad median plate that suddenly narrows into a stout fingerlike lobe, the whole outer portion with a fringe of unusually long setae.

Male. Length about 15-17 mm.; wing 15-15.5 mm.; antenna about 3.5-4 mm.

Female. Length about 18 mm.; wing 17 mm.

Frontal prolongation of head yellow; nasus stout; palpi obscure brownish yellow, the outer half of terminal segment blackened. Antennae relatively short; basal three segments yellow, remainder of flagellum black; flagellar segments only moderately incised, a trifle shorter than the longest verticils. Head yellow, sparsely pruinose, especially on the scarcely developed vertical tubercle and the posterior orbits.

Pronotum brownish yellow. Mesonotum chiefly gray, the praescutum with four entire reddish brown stripes, the intermediate pair narrow; posterior sclerites of notum more heavily pruinose. Pleura yellow, sparsely pruinose; dorsopleural membrane clear yellow. Halteres with stem dusky, pale at base, knob more darkened. Legs wth the coxae and trochanters yellow; femora brownish yellow, narrowly and weakly darkened at tips; tibiae and basitarsi yellowish brown, the remainder of tarsi passing into black; claws (male) toothed. Wings with a weak brownish tinge, heavier in the prearcular and costal fields; stigma small, darker brown; a diffuse brown cloud over *m-cu;* obliterative area before cord conspicuous, extending to the basal third of cell M_3; no post-stigmal brightening; veins brown. Venation: *Rs* arcuated to weakly angulated at origin, nearly twice *m-cu*; R_{1+2} preserved; *m* and petiole

of cell M_1 subequal in length; M_{3+4} subequal to or a trifle longer than the basal section of M_{1+2}.

Abdomen dull yellow, scarcely patterned. Ovipositor with the cerci long and relatively slender, only gently upcurved to the subacute tips. Male hypopygium with the ninth tergite relatively small, divided medially by pale membrane; lower outer angles produced caudad and ventrad into stout blackened spines; posterior border mesad of these spines less heavily blackened. Ninth sternite with its appendage long and curved, more or less flattened. Basistyle entire, unarmed. Outer dististyle with outer half dilated into a weak spatula. Inner dististyle with the beak long and slender, widely separated from the small more blackened lower beak by a large oval notch; dorsal crest low, slightly corrugated, setae small; posterior crest produced into a triangular point, the entire region with numerous coarse reddish setae; outer basal lobe elongate-triangular in outline, the posterior portion fringed with long coarse reddish setae. Phallosome conspicuous, consisting of four sclerotized toothed rods, arranged in pairs of two each. Eighth sternite distinctive, sheathing, with a semidetached lobe at each outer angle, this tipped with a single strong fasciculate bristle; a broad median plate that suddenly narrows at apex into a stout fingerlike lobe, the whole outer portion, including the lobe, with a fringe of unusually long setae that appear as a flattened brush directed caudad.

Habitat. CALIFORNIA (SAN BERNARDINO COUNTY).

Holotype, ♂, EAST BARTON FLATS, San Bernardino Mountains, altitude 6300 feet, August 17, 1946 (John and Grace Sperry). *Allotopotype*, ♀, at light, July 16, 1946. (Sperry and Alexander). *Paratopotypes*, 2 ♂ ♂, with the allotype.

This fly appears to belong to the *unicincta* group but is not typical and its exact relationships are in doubt. Some points of similarity with species such as *Tipula* (*Lunatipula*) *mormon* Alexander seem to be indicated.

A EUROPEAN WEEVIL NEWLY INTRODUCED INTO THE SAN FRANCISCO BAY REGION

While collecting in the outskirts of Mill Valley, Marin County, on April 4, 1947, D. Giuliani, one of our younger entomologists, noticed numerous specimens of *Barypithes pallucida* Boh., crawling up the curbing along the roadside.

This European weevil has long been esetablished in the Eastern part of our country but this is, I believe, the first time that it has been noticed on the Pacific Coast.—EDWIN C. VAN DYKE.